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ABSTRACT

This paper presents the results of a 1969 survey of the quality of graduate programs in the United States (an earlier survey was made in 1964). The ratings of graduate programs are based upon responses to questionnaires distributed to faculty members: respondents were asked to give their opinion on graduate faculty quality using the classifications: Distinguished, Strong, Good, Adequate, Marginal, and not sufficient for doctoral training. The respondent was instructed not to rate more than 5 departments as Distinguished. This paper examines: (1) the differences between the 1964 and 1969 surveys; (2) the changes in evaluations of departments at the University of Chicago; (3) the number of top-ranked departments in 1964 and 1969; and (4) the changes in rankings between 1964 and 1969. Comparisons are also made based on the departments ranked in the top 10 and the top 15. On the basis of this survey, Berkeley and Harvard were first, followed by Yale, Chicago, Stanford, and Princeton. The appendix discusses the problem of weighting the various disciplines, and the possibility of weighting the major divisions: (humanities, social sciences, physical sciences, and biology) by the percentage of doctorates awarded in the arts and sciences in 1966. (AP)

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A RATING OF GRADUATE PROGRAMS

A Report of the American Council on Education

An Analysis by D. Gale Johnson*

The second in a series of surveys of the quality of graduate education was undertaken under the auspices of the American Council on Education. The most recent survey was undertaken in 1969 while the first was for 1964.

A Rating of Graduate Programs presents the results of the second survey of the quality of graduate programs in the United States. The earlier survey was based on data collected in 1964 while the most recent survey was made in 1969. The ratings of graduate programs are based upon responses to questionnaires distributed to faculty members; respondents were asked to give their opinion of the quality of the graduate faculty and could classify a given department as Distinguished, Strong, Good, Adequate, Marginal and not sufficient for doctoral training. The respondent was instructed not to rate more than five departments as Distinguished.

There are a number of differences in the presentation of the results of the two surveys. In 1964 the number of arts and science disciplines surveyed was 25; in 1969 the number of disciplines included was 32. Major changes in disciplines were made in the humanities and biological sciences. In 1964 there were approximately the same number of disciplines surveyed in each of the major divisions of the arts and sciences. However, the 1969 survey presents information for 10 disciplines in the humanities and biological sciences, 7 in the social sciences and 5 in the physical sciences. Psychology was categorized as a biological science in 1964 and as a social science in 1969.

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A second important difference in the presentation of the ratings is absence of the average departmental score by university department in 1969; in 1964 an average departmental score was derived from the ratings given by the respondents. A third important difference is that the distinction between Distinguished and Strong was not made in 1969. The primary common element in the presentation of the results of the two surveys is the ranking by universities of those departments that received average scores of 3.0 or more.

My purpose in preparing this note is primarily to give some perspectives on the changes in evaluations of graduate programs over the period from 1964 to 1969, with special attention to The University of Chicago.[1] While it is possible to make comparisons of the relative standings of the graduate programs in the arts and sciences among the top universities--and some are presented later--the indications of changes in the evaluations are probably subject to less error than are the relative rankings of the various universities.

A. Changes in Evaluations of Departments at The University of Chicago

Though departmental scores were not published, each university included in the ratings was provided with the average scores for its departments. Based on this information as well as the published data, some of the changes in the evaluation of departments at the University of Chicago between 1964 and 1969 can be shown.

Number of departments ranked as Distinguished: In the 1964 survey an average score for the quality of the graduate faculty of more than 4.0 resulted in a ranking of Distinguished. In 1964 there were seven departments ranked as Distinguished; in 1969 five additional departments were so ranked and each of the seven so ranked in 1964 retained that ranking.

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[1] The two surveys include ratings of engineering departments but do not include ratings of other professional schools. All of the comments in this note refer only to the arts and science disciplines.

Changes in departmental scores: Of the 25 departments that were included in both surveys, 13 departments received higher scores, 7 the same score and 4 had lower scores in the recent survey.

Number of departments in the top five and top ten: In 1964 25 departments were included in the survey. At that time Chicago had 7 departments in the top five departments and 13 in the top ten. In 1969 32 departments were included in the survey and 14 of the Chicago departments were in the top five and 22 in the top ten. In both cases the increase in number of top ranked departments was substantially greater than would have been expected due to the increase in the number of departments included in the survey.

B. Comparison of the Number of Top Ranked Departments, 1964 and 1969

One comparison that can be made from the data provided in the 1964 and 1969 surveys is of the number of departments at different universities that were in a given relative position, such as the top 5 and top 10. The top five approximates the category of Distinguished departments as used in the 1964 survey, while the top 10 includes the Distinguished departments and the best of the departments that were formerly rated as Strong (with average scores from 3.0 to 4.0). In the following tabulation universities are ranked by the number of departments in the top five departments; in the case of ties that include the fifth or tenth ranked department, all departments were included that are so tied.

It is clear that Berkeley and Harvard had a substantially larger proportion of their departments ranked in the top five in both 1964 and 1969 than any of the other universities. In 1969 Chicago had the third largest number, followed closely by Yale, Stanford and Princeton. Again for 1969 in

TABLE 1

NUMBER OF HIGH RANKING DEPARTMENTS FOR SELECTED UNIVERSITIES

University	Number of Departments Top Five 1969	Top Five 1964	Top Ten* 1969	Top Ten* 1964
University of California, Berkeley	28	23	30	24
Harvard	27	22	29	24
Chicago	14	7	22	12
Yale	13	9	22	14
Stanford	12	5	21	15
Princeton	12	8	17	14
Michigan	10	7	19	16
MIT	8	3	13	7
CALIFORNIA Inst. of Tech.	8	5	9	8
Columbia	5	6	13	15
Wisconsin	8	7	19	17
Cornell	3	2	17	9
Pennsylvania	3	3	10	7
Illinois	4	2	8	7
New York University	1	0	3	1

*Only seven Russian departments were individually ranked.

terms of the departments ranked in the top 10, Berkeley and Harvard lead, though the distance between them and the next several universities is not so great as in the case of the top five departments.

Because of the difference in the number of departments included in the 1964 and 1969 surveys, a direct comparison of the change in the number of departments in the top five or top ten is somewhat difficult to interpret. As noted above, 25 departments were included in 1964 and 32 in 1969. Only two of the high ranking universities (Chicago and Stanford) had an increase of seven in the number of top five departments between 1964 and 1969; Berkeley and Harvard each had an increase of five. Chicago had the largest increase in the number of departments in the top ten--10--followed by Cornell with eight, Berkeley and Stanford with six, and Harvard with five.

C. Changes in Rankings, 1964 to 1969

Comparisons of the number of departments rated as among the top 5 or top 10 implies no distinctions among the departments within each category. In the absence of average scores by department and university, it is possible to differentiate and aggregate the data by assigning a score to each department based on its actual ranking as first, second, third or any other rank. Two such comparisons, with an emphasis upon change between 1964 and 1969, have been made. One is based upon the departments that were ranked from first to tenth and the other upon departments ranked from first to fifteenth. In the first case a department that was ranked first was given a score of 10, a second rank a score of 9, and so on until the tenth ranked department was given a score of one; departments ranked lower than tenth received no score. In the second case the first ranked department received a score of 15 and each department ranked between second and fifteenth received scores of 14 down to 1.

The scores so derived can be summed either for each university or for the four broad areas within the arts and sciences (humanities, social sciences, biological sciences and physical sciences).

There are two problems in the comparison of such total scores. One is that the number of disciplines surveyed within the broad divisions of the arts and sciences is a function of the extent to which specialization has resulted in the creation of separate fields for the Ph.D. Thus the physical sciences are represented by only five disciplines, while there are ten each in the humanities and biological sciences. Thus to total the scores for a university as a whole is, in effect, giving twice as much weight to the humanities than to the physical sciences. A general guide to the appropriate weights by division might be the distribution of doctorates awarded. In 1966 the approximate number of doctorates awarded were: Physical sciences, 3,800; social sciences (including history), 3,300; humanities, 1,800 and biological sciences (excluding agriculture), 2,300. Thus in terms of relative emphasis in graduate education, the physical and social sciences should have significantly greater weight than the humanities or biological sciences. Except for a calculation included in an appendix note, the calculations presented in Tables 2 and 3 weight the four divisions equally.

Comparisons Based on the Departments Ranked in the Top Ten and Top Fifteen

In the next two tables the higher the total score, the higher is the implied ranking of a university's graduate faculty. In these two tables the average scores, based on equal weight for each of the four divisions, are given for 1964 and 1969. The average scores for each division for each included

TABLE 2

AVERAGE SCORES BY UNIVERSITY FOR DEPARTMENTS BASED ON TOP TEN RANKED DEPARTMENTS, 1964 and 1969

University	Average Score		Change 1964 to 1969
	1969	1964	
Berkeley	7.63	8.20	-0.63
Harvard	7.48	8.50	-1.02
Yale	3.94	4.03	-0.09
Chicago	3.86	2.86	+1.00
Stanford	3.64	2.66	+0.98
Princeton	3.44	3.72	-0.28
Michigan	3.01	2.47	+0.54
Wisconsin	2.65	3.10	-0.45
Columbia	1.82	2.88	-1.08

TABLE 3

AVERAGE SCORES BY UNIVERSITY FOR DEPARTMENTS BASED ON TOP FIFTEEN RANKED DEPARTMENTS, 1964 AND 1969

University	Average Score		Change 1964 to 1969
	1969	1964	
Berkeley	12.50	13.19	-0.69
Harvard	11.93	13.22	-1.29
Yale	7.93	7.75	+0.18
Chicago	7.59	5.80	+1.79
Stanford	7.41	6.06	+1.35
Princeton	6.77	6.41	+0.36
Wisconsin	6.43	7.33	-0.90
Michigan	6.37	6.01	+0.36
Columbia	5.35	6.18	-0.83

university are given in tables at the end of this note.[1] The change in average scores from 1964 to 1969 are also given.

Perhaps a word is in order concerning the interpretation of the size of the average scores. In the scores based on the top ten ranked departments, if all departments in a given university were ranked first the score would be 10; if all departments were in the top ten and the average ranking were five the university score would be 6. For the scores based on the top fifteen departments, a similar interpretation holds though the maximum score is increased to 15 and the score for a university with an average ranking of five would be 11.

Tables 2 and 3 are based on the average ranks of departments by university for the nine universities that ranked highest in 1964 based on average departmental scores. In 1964 the rankings based on average departmental scores were Harvard, Berkeley, Yale, Princeton, Chicago, Stanford, Wisconsin, Michigan and Columbia.

The averages of the scores based on the rankings of the top ten departments (Table 2) indicate that six universities suffered declines, with the largest declines being for Harvard and Columbia. A decline of 1.00 implies an average decline in departmental ranking of one position. Chicago and Stanford increased their average departmental ranking by one, based on the top ten ranked departments.

The averages of scores based on the rankings of the top fifteen departments (Table 3) show much the same picture. Four universities had a decline in average departmental rankings, with Harvard having the largest decline and Wisconsin the second largest. Princeton had a small increase in score between 1964 and 1969 based on the top fifteen departments in contrast to a small decline when scores were based on the top ten departments. Chicago and Stanford

[1] The scores are averaged rather than totalled for two reasons: First, to avoid difference in scores due to the number of disciplines included in the two surveys, and, second, to facilitate the weighting of the divisions to arrive at an average for an entire university.

had substantial increases in average scores, with Chicago having the largest increase when the top fifteen departments are included and Stanford the largest increase based on the top ten departments.

Clearly the distance between the top two universities (Harvard and Berkeley) and the next four (Yale, Chicago, Stanford and Princeton) was diminished over the five year period.

APPENDIX NOTE

The authors of A Rating of Graduate Programs state (page 33): "There still exist serious difficulties in determining how disciplines should be weighted. Should classics count as heavily as psychology or electrical engineering?" There is no doubt that a serious problem exists. In the previous material it has been assumed that there should be no distinctions in weighting among departments in the same division of the arts and sciences and that each of the divisions (humanities, social sciences, physical sciences and biology) should be, in turn, given equal weight. There are other reasonable weighting systems that could be used. One is the distribution of graduate students among disciplines as measured by the number of doctorates awarded in recent years. It would be possible to weight each department or discipline by the percentage of all doctorates in the arts and sciences awarded in a given year or period. The other possibility, and the one illustrated here, is to weight the major divisions by the percentage of doctorates awarded in the arts and sciences in 1966.[1]

Based on the 1966 data on doctorates awarded approximately 34 per cent of the degrees in arts and sciences were in the physical sciences, 30 per cent in the social sciences, 20 per cent in the humanities and 16 per cent in the biological sciences. In Appendix Tables 1 and 2 the average

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[1]The data are from the National Academy of Sciences, Doctorate Recipients from United States Universities, 1958-1966 (Washington, 1967), pp. 10-11. Doctorates in agriculture and forestry have been excluded from the biological sciences and history has been included as a social science since it is so designated in A Rating of Graduate Programs. Degrees in engineering are not included.

departmental scores (based on rankings) for each division are weighted by these percentages to arrive at a university average score. As is evident from Appendix Tables the method of weighting used does make a difference. Appendix Table 1 is based on departments ranked in the top ten and is thus comparable to Table 2, except for the difference in weighting. Appendix Table 2 is based on the scores for the top fifteen departments and is comparable to Table 3 above. Appendix Tables 2 and 3 also include the average departmental scores by division based on the rankings of the disciplines within each division for nine universities. These average departmental scores by division were used to derive the results in Tables 2 and 3.

The major effect of the weighting of the divisions by the proportion of doctorates awarded in the arts and sciences was to change the rankings of Yale and Chicago in 1969 for scores based on either ten or fifteen departments. Chicago ranks third and Yale fourth when weighting by national doctorate production is used.

APPENDIX TABLE 1

Average Scores of 10 Top Ranked Departments by Divisions and by Universities with Divisions Weighted by Doctorates Awarded in 1966.

Division A-1969	Harvard	Berkeley	Yale	Chicago	Stanf'd	Princton	Wis.	Mich.	Colum.
Humanities	7.65	7.45	6.50	3.45	2.00	5.60	1.90	3.25	3.35
Soc. Sci.	7.21	7.79	4.93	6.50	3.36	2.14	3.36	6.21	2.14
Biology	5.95	6.80	2.35	1.70	4.40	0.50	3.45	2.40	0.00
Phy. Sci.	8.60	8.50	2.00	3.80	4.80	5.50	1.90	0.20	1.80
Weighted Average Score	7.57	7.80	3.83	4.20	3.74	3.71	2.59	2.97	1.92
B-1964									
Humanities	9.50	8.34	7.00	1.67	0.33	6.25	2.42	2.25	4.08
Soc. Sci.	8.14	7.93	5.21	6.35	2.93	2.43	4.07	4.00	3.78
Biology	7.57	7.89	1.71	0.00	2.86	0.00	4.14	2.86	0.14
Phy. Sci.	8.80	8.50	2.20	3.40	4.00	6.20	1.70	0.60	3.50
Weighted Average Score	8.55	8.23	3.98	3.40	2.86	4.09	2.96	2.31	3.16
Difference 1969-1964	-0.98	-0.43	-0.15	+0.80	+0.88	-0.38	-0.37	+0.66	-1.34

APPENDIX TABLE 2

Average Scores of 15 Top Ranked Departments by Divisions and by Universities with Divisions Weighted by Doctorates Awarded in 1966.

Division A-1969	Harvard	Berkeley	Yale	Chicago	Stanf'd	Princt'n	Wis.	Mich.	Colu
Humanities	12.65	12.45	11.50	7.25	5.35	10.10	4.85	7.40	7.00
Soc. Sci.	11.51	12.81	8.86	10.80	7.08	4.93	8.01	11.23	5.51
Biology	9.95	11.25	5.45	3.70	8.40	1.95	6.95	4.85	2.50
Phy. Sci.	13.60	13.50	5.90	8.60	8.80	10.10	5.90	2.00	6.50
Weighted Average Score	12.20	12.72	7.84	8.21	7.53	7.24	6.49	6.30	5.66
B-1964									
Humanities	14.50	13.50	11.50	6.17	3.33	9.42	6.17	6.25	6.83
Soc. Sci.	12.71	13.06	8.92	10.64	6.78	5.28	9.35	9.00	7.64
Biology.	11.85	12.71	3.57	0.70	6.14	0.35	7.71	5.70	1.86
Phy. Sci.	13.80	13.50	7.00	7.40	8.00	10.60	6.10	3.10	8.40
Weighted Average Score	13.30	13.24	7.93	7.05	6.40	7.13	7.35	5.92	6.81
Difference 1969-1964	-1.10	-0.52	-0.09	+1.16	+1.13	+0.11	-0.86	+0.38	-1.15